Welcome to the CWNS Web Seminar Series

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Clean Watersheds Needs Survey (CWNS) 2008

Documenting Decentralized Wastewater Treatment Needs

Presenters:
Joyce Hudson, US EPA
Karen Fligger, US EPA
Eleanor Krukowski, NJ DEP

Thank You

- Eleanor Krukowski (NJ)
- Joyce Hudson (EPA HQ)
- Amanda Crovo (CT)
- Dave Schepens (DE)
- Robert Scully (CT)
- Donna Somboonlakana (EPA R2)
- Ray Kvalheim (EPA R2)
- Jim Anderson (MN)
- Shelly Love (IN)

What is CWNS

What is CWNS?

- Assessment of capital needs to meet the Clean Water Act's (CWA) water quality goals
- Need: A capital project, with associated costs, that addresses a water quality or water-related public health problem
- Joint effort by EPA, States, & Local organizations
- Every 4 years as required by CWA Sec 516 (started in 1972)
- Results in Report to Congress

What data is collected?

- Includes information about:
  - Publicly owned wastewater facilities
  - Stormwater management projects
  - Combined sewer overflow (CSO) control
  - Non-point source pollution control projects
  - Estuary Management projects
  - **Decentralized wastewater treatment projects**

What data is collected?

- Information collected includes:
  - Estimated needs (cost and technical information) as of Jan. 1, 2008
  - Location and contact information
  - Permit information and discharge data
  - Solution to the problem, e.g. best management practices (BMPs)
  - WWT facility population served, flow, effluent, and unit process data
  - Decentralized population served

Questions

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Top 6 Reasons to Enter Decentralized Needs

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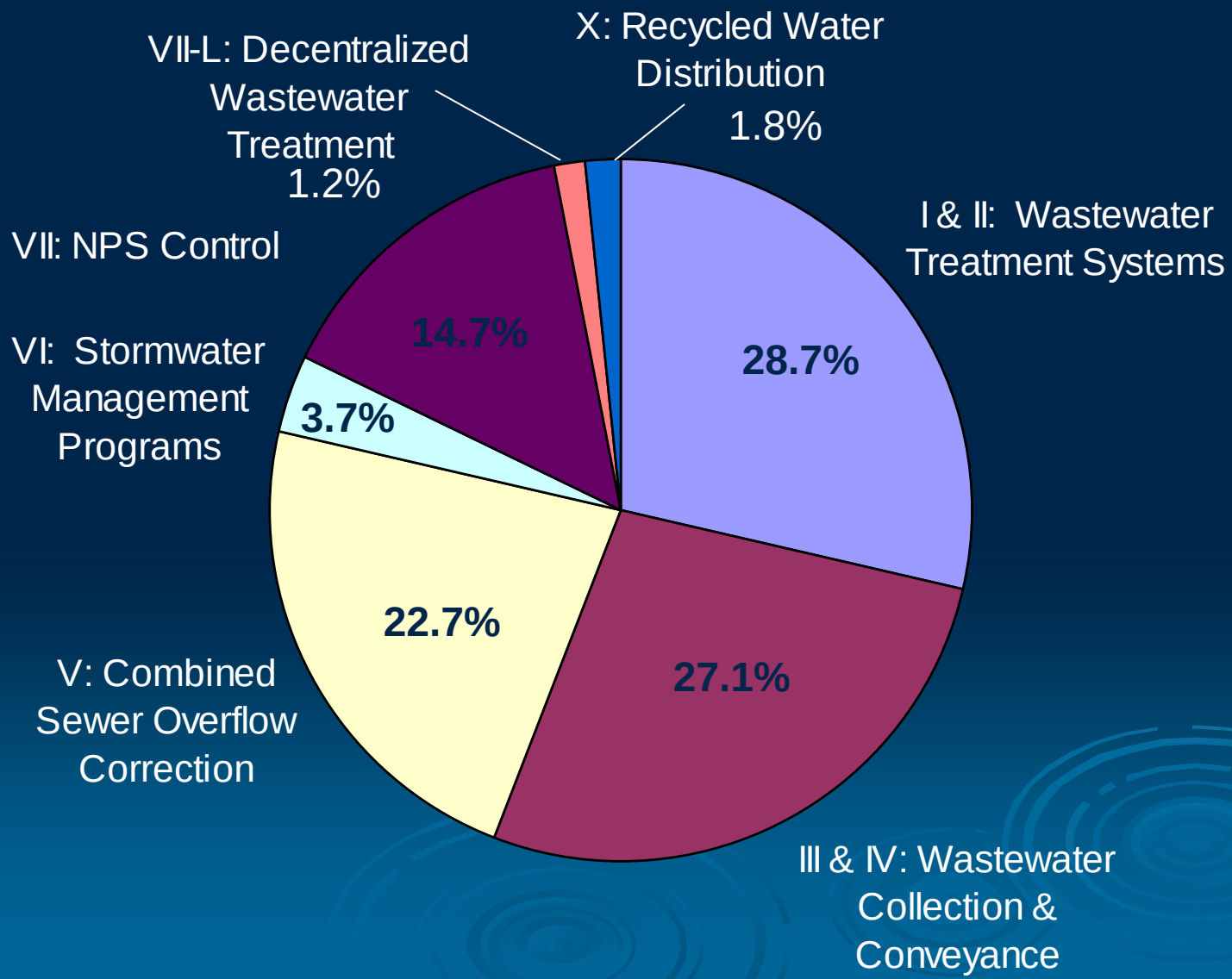
1. The needs are underreported.

CWNS 2004 Distribution of Needs



The needs are underreported

- 20 States did not report Needs in this category
- Decentralized system population reported in CWNS 2004 was 15.6 million
  - Represents only ~20% of population being served by individual/ decentralized systems.
- States reporting highest amounts are: MN, IN, TX, OH, CT, NJ.
- 15 States reported needs less than $10 million

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3. Tool to collect data for programmatic planning purposes at the state and national level
4. **Informs the public and contributes to academic research**

ASK WATERS Questions

Click here to find your question based on applicable program, keyword, or metadata search.

NOTE: Click on the displayed Question to start your Ask WATERS Query!
Click on the Associated Programs to see a Report Description.

EPA Program Management Questions	
Question	**Associated Programs (Click on link to see Report Description)**
How many TMDLs have been completed since 1/1/1998?	Total Maximum Daily Load (TMDL) / NTTS / 303(d)
What TMDLs are associated with PCS facilities?	Total Maximum Daily Load (TMDL) / NTTS / 303(d)
What causes of impairments for an impaired water have been de-listed and what were their reasons for de-listing?	Total Maximum Daily Load (TMDL) / NTTS / 303(d)
How many CWNS 2000 facilities and projects have needs and in what categories are their needs?	Clean Watersheds Needs Survey / CWNS 2000
What CWNS 2000 facilities and projects have needs documented to federal standards?	Clean Watersheds Needs Survey / CWNS 2000
What are the current and projected flows for publicly owned wastewater treatment facilities?	Clean Watersheds Needs Survey / CWNS 2000
How many people are served by publicly owned wastewater treatment facilities?	Clean Watersheds Needs Survey / CWNS 2000
What are the federal needs and flow measures for CWNS 2000 facilities?	Clean Watersheds Needs Survey / CWNS 2000
What are the federal needs and population data for CWNS 2000 facilities?	Clean Watersheds Needs Survey / CWNS 2000
What are the federal needs, flow measures, and population data for CWNS 2000 facilities?	Clean Watersheds Needs Survey / CWNS 2000
What are the discharge methods and locations for CWNS 2000 facilities and projects?	Clean Watersheds Needs Survey / CWNS 2000
What are the names and locations of publicly owned wastewater treatment facilities currently in operation?	Clean Watersheds Needs Survey / CWNS 2000
Analytical/Statistical Questions	
	Associated Programs (Click on link to see

U.S. Environmental Protection Agency

Watershed Assessment, Tracking Results System

ASK WATERS

Enter Report Selection Criteria for: How many CWNS 2000 facilities and projects have needs and in what categories are their needs?

Return to Ask WATERS Question List

Geographic Location Criteria

EPA Region: No Region Selected

State:
- No State Selected
- AK - Alaska
- AL - Alabama
- AR - Arkansas
- AS - American Samoa

Watershed (Hydrologic Unit Code) - Click Map or List to Select Code

(Display only)

County Name - Click List to Select County

(Display only)

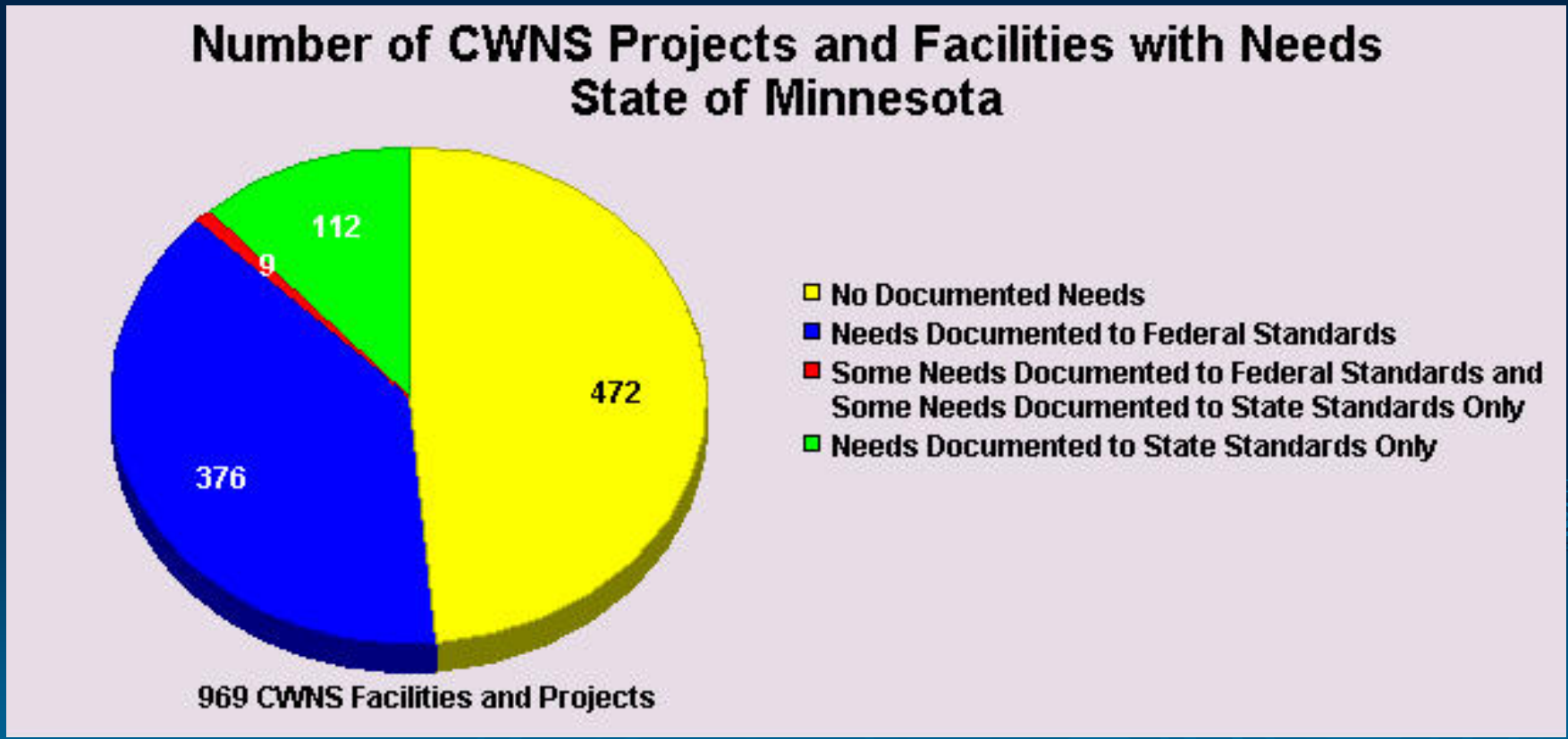
Congressional District - Click List to Select Congressional District

(Display only)

Run Report Reset

Ask WATERS Results

- Tables, charts, graphs
- Links to facility factsheets and maps



Top 6 Reasons to Enter Decentralized Needs

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2. Assists Congress and state legislatures to develop budgets and set policy
3. Tool to collect data for programmatic planning purposes at the state and national level
4. Informs the public and contributes to academic research
5. **Provides documentation needed to apply for funding, including SRF loans**

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5. Provides documentation needed to apply for funding, including SRF loans
6. **Brings attention to decentralized treatment as a significant part of wastewater management**

Questions

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Collecting and Entering Decentralized Data

Changes for 2008

- Decentralized Data will be collected/ reported in a separate category (Category XII: Decentralized Wastewater Treatment System Needs)
- Category will include subcategories
  - Onsite Wastewater Treatment Systems
  - Clustered Systems
- New systems will be eligible

Eligibility

- To be eligible for CWNS, needs must be:
  - Capital costs
  - Fall within CWNS categories
  - Meet CWNS documentation criteria
- No longer needs to meet SRF eligibility criteria.

Category XII: Decentralized Wastewater Treatment Needs

- Costs associated with the construction of new systems, or the repair or replacement of existing decentralized wastewater treatment systems including:
  - Clustered Systems
  - Onsite Wastewater Treatment Systems (OWTS)

Other Relevant Categories

- When the solution to a decentralized systems problem is to connect the area to a centralized system:

- Needs to construct a publicly owned centralized collection and treatment system
  - Category I- Secondary Wastewater Treatment and/or Category II- Advanced Wastewater Treatment

- Needs to install sewers to connect the service area to an existing collection system.
  - Category IV-A- New Collector Sewers and Appurtences and IV-B- New Interceptor Sewers and Appurtenances

Six Criteria for Documenting Needs and Costs

1. Description of the water quality or public health problem
2. Location of the problem

Needs

3. Solution to the problem
4. Cost of the solution
5. Basis for the cost
6. Total cost

Costs

1. Description of the water quality or public health problem

- Examples:
  - Complaint issued
  - Permit issued
  - Implemented municipal or state regulation

Example State Regulation

- From Delaware (draft):
  - *All cesspools or seepage pits are prohibited within Indian River, Indian River Bay, Rehoboth Bay and Little Assawoman Bay watersheds and shall be replaced in accordance with the Regulations Governing the Design, Installation and Operation of On-Site Wastewater Treatment and Disposal Systems and these Regulations of the Pollution Control Strategy for the Indian River, Indian River Bay, Rehoboth Bay and Little Assawoman Bay Watersheds.*
  - *All innovative and alternative onsite wastewater treatment and disposal systems having flows of less than or equal to 2,500 gallons per day must comply with Performance Standard Nitrogen level 3.*

2. Location of the problem

- Clustered System- a single latitude/longitude point (centroid or front door)

- OWTS (one of the following)
  - A list of latitudes and longitudes.
  - A list of street addresses or street blocks
  - A paper or electronic map indicating the areas served by OWTSs in your jurisdiction.
  - If a project area applies to a complete town or county, a latitude/longitude for the town centroid can be submitted.

3. Solution(s) to the problem

- Possible solutions
  - Construct new system(s)
  - Repair existing system(s)
  - Replace existing system(s)

- Others:
  - Alterations
  - Upgrades to innovative/advanced treatment

What if you don’t know the solution

- Assume the solution is to repair the existing system (with no significant alterations to system) if no documentation exists on need to replace it
- Apply a ratio if the state has collected sample data within an area.

Develop a ratio based on data

- Use a survey or an existing database to document the typical number of repairs, replacements, and/or new systems in a time period and geographic area
- Several state surveys and a model survey is available at:
  http://www.epa.gov/cwns/decentrneedsbpfinal.pdf

4. The cost for each solution

- A cost is required for each proposed solution.
- Generally, at least:
  - Repairs
  - Replacements
  - New systems
- Can provide costs for:
  - Alterations
  - Innovative/advanced treatment

5. The basis of the cost

- The source of the cost data, for example:
  - Engineer’s estimates
  - Costs from comparable practices
  - Equipment supplier or installer’s estimates
  - Permits

Costs from comparable practices

- Cost must be based on at least 3 bid or completed projects that are:
  - Recent: within the last two years.
  - Similar in size, scope, and geographic area.
  - Size: plus or minus 25 percent.
  - Generally in the same county or watershed.
- Must be pre-approved by your EPA region and EPA headquarters

Engineer, installer, or equipment supplier's estimates

- A good source of cost data
- MN example:
  - Conducted survey at recertification workshops (309 installers)
  - Asked for actual installation cost of four basic systems
  - Developed a weighted average installation cost

Cost Curves

- Available in data entry system:
  - All OWTS (mixture of conventional and innovative systems)
  - Conventional OWTS (traditional gravity-fed tank and trench system)
  - Innovative OWTS (any type of OWTS with technology superior to a conventional OWTS)
  - Clustered systems

Data need for Cost Curves

	Data Elements (R= required; O= optional, NA= not applicable)							
Cost Curves	No. of new systems (resident)	No. of new systems (non-resident)	No. of system rehabilitations (resident)	No. of system rehabilitations (non-resident)	Population or no. of houses served (resident)	Population or no. of houses served (non-resident)	Number of Conventional Systems	Number of Innovative Systems
All OWTS (mixture of conventional and innovative systems)	R	O	R	O	O	O	O	O
Conventional OWTS (traditional gravity-fed tank and trench system)	R	O	R	O	O	O	R	NA
Innovative OWTS (any type of OWTS with technology superior to a conventional OWTS)	R	O	R	O	O	O	NA	R
Cluster systems	R	O	R	O	O	O	NA	NA

6. The total cost

- The total cost of all decentralized wastewater treatment needs documented for the area (e.g., county, watershed) must be provided.

Questions

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Clean Water Needs Survey
New Jersey's Onsite Strategy

Bureau of Nonpoint Pollution Control
NJ Department of Environmental Protection

CWNS

- Predominantly larger projects
- Terminology appropriate for larger projects
- Categories and Sub Categories that don’t fit that mold under reported

Onsite Program

- Community (Decentralized) Systems >2000 gpd
  - State NPDES type permits (UIC) performance oriented
- Residential/Commercial 2000 gpd or less
  - Local Health Department Permits construction oriented

Onsite Program

- State Permitted Facilities (ground water permits)
  - achieve State Ground Water Quality Standards
  - comply with State Planning Rules
  - comply with operation and maintenance requirements
- This program has been in existence for 24 years

Onsite Needs

- State Permitted Facilities (Community systems)
  - most do not qualify for SRF
- NJ's predominant Onsite "Need" involved individual residential systems permitted by the local health departments

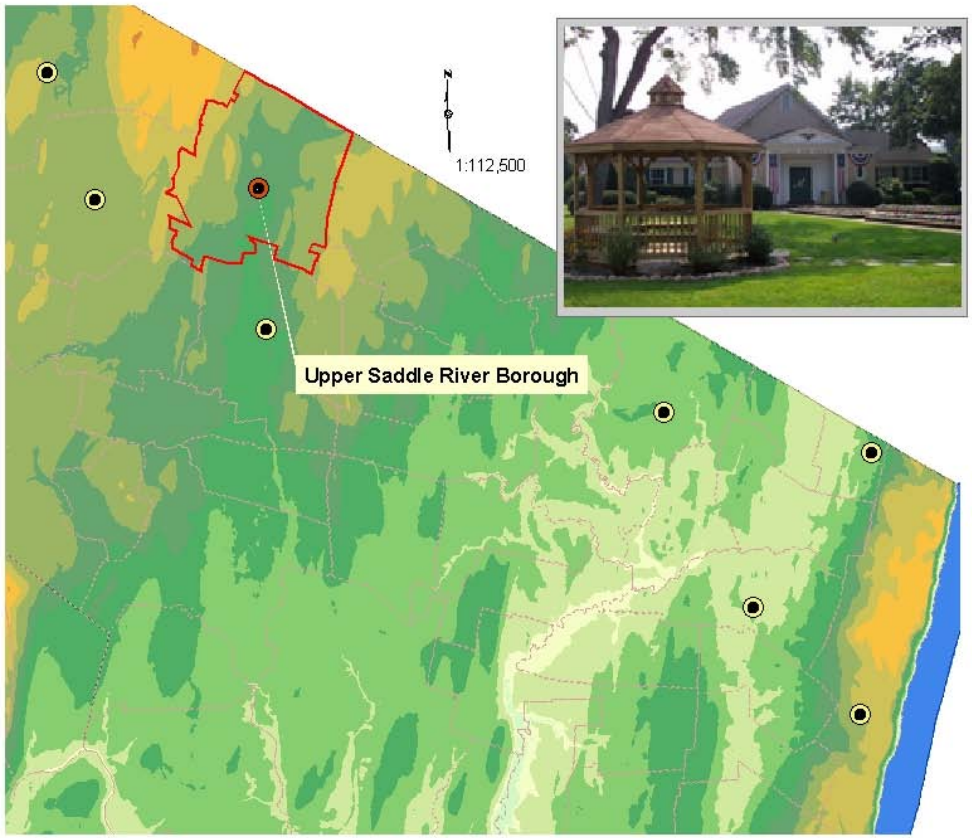
Onsite Needs

- Issues to overcome
  - permitted at the local level (variations in interpretation)
  - no unified state database
  - failing systems must be fixed (short time frame)
  - no standard “Needs” documentation
- Categorized as a Nonpoint Source

Onsite Needs

- SRF eligibility
  - Wastewater Treatment Bond Act limits who can get loans
  - Results in both challenge and incentive for Needs Survey
- Establish individual onsite Needs by municipality

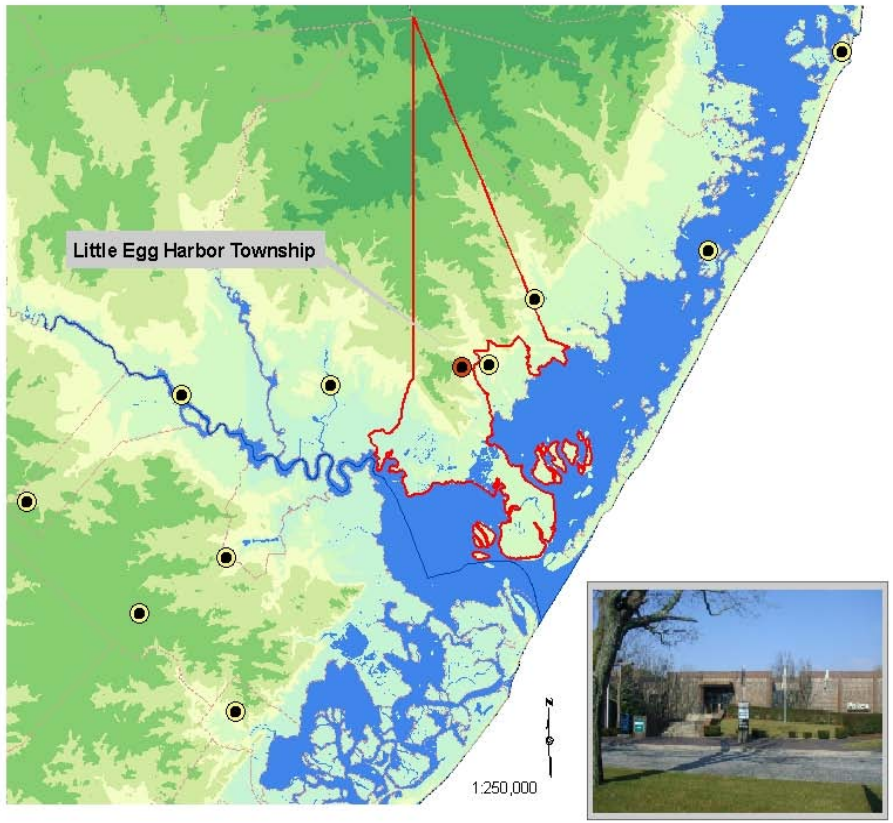
Upper Saddle River Onsite Wastewater Treatment System Report

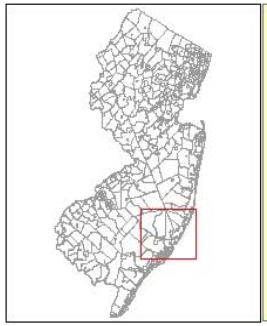


2003 Septic Information

Contact Person: Deborah McGrath, NWBRHC
New Systems: 29
Repairs: 9
Malfunctions: 25
Total: 63
Flow: 35,500
Common Reason for Malfunction
Age: 12 ; Misuse: 2 ; Water Table: 3

Little Egg Harbor Onsite Wastewater Treatment System Report





2003 Septic Information

Contact Person: Robert Ingenito, OCHD
New Systems: 58
Repairs: 12
Total: 70
Flow: 35,000
Common Reason for Malfunction
Misuse: 12

Onsite Needs

- What we had
  - Individual home systems as “Need”
  - Local health department permit numbers grouped by municipality
  - Municipalities eligible for SRF funds
  - Individual homes fixed quickly, not the right kind of documentation

The Needs Survey

- Municipalities managing systems
  - Establish a turn-over rate as the average number of systems fixed each year (permits)
  - Turn-over rate used to predict the dollar amount of loans that would be needed in any given year

The Needs Survey

- Each Municipality as a facility
- Point of contact - Mayor
- Phone number - City Hall
- Address - City Hall
- Lat and Long - City Hall
- Watershed - City Hall

The Needs Survey

- Population - 3 people per household multiplied by number of repair and alteration permits
- Flow - Number of repair and alteration permits multiplied by flow for 3 bedroom home (assumed based on average 3 people per home)

The Needs Survey

- Documenting Costs
  - State applications for residential code waivers
  - Average cost estimates
  - Negotiate with USEPA for place in cost curve

CWNS#: 34003055021 Facility: Little Egg Harbor Twp NPS Review Status: HA 05/13/05
NPDES: Federal Needs ($000): $150

System Name:

Point of Contact **Tribe:** No

Location (Point of Record)

County, State: Ocean NJ
Congressional District: 3403
Within Tribe Territory: No
Latitude/Longitude: 39.5664 N / 74.3695 W
Watershed: Mullica-Toms.
NHD Index:

Name: Mayor
Authority: LITTLE EGG HARBOR Twp
Address: 7 Gifford Road
LITTLE EGG HARBOR NJ 08087
Phone: 6092967241 Fax:
Email:

Facility Description

Nature	Present	Projected	Change(s)
Ground Water - Unknown Source	N	Y	New
Individual On-Site System Area	Y	Y	Rehabilitation
Urban	Y	Y	Rehabilitation

Permit(s) Number Type
*indicates NPDES Permit

Needs ($000, adjusted to Current Year)

Cat.	Description	Federal	Separate State Estimate
VII-D	NPS-Urban		$96
VII-E	NPS-Ground Water - Unknown Source		$578
VII-L	NPS-On-site Septic & Decentralized Sys.	$150	
	Total:	$150	$674

Needs Data by Document ($000, adjusted to Current Year) *Separate State Estimate

Doc	Document Title	Author	Doc Date	Base Date	Needs
05	NJ Individual/Decentralized Sew. Treat.	NJDEP	01/01/04	01/01/04	$150
10*	NJ Green Acres Prog - Grants & Loans	NJDEP	05/03/04	05/03/04	$242
22*	SIIA STATUS REPORT TO LEGISLATURE	NJDEP	08/15/92	01/01/96	$96
23*	NJ Green Acres Prog-State Acqui. Project	NJDEP	05/01/04	05/01/04	$336

Wasterwater Treatment Population	Resident Population		Non-resident Population	
	Present	Future	Present	Future
Not Receiving Collection				
Receiving Collection				
Upstream Population Receiving Collection				
Total Receiving Treatment (computed)				
Individual Sewage Disposal System	188	188		

Wastewater Treatment Flow (mgd)	Existing	Present Design	Future Design
Municipal			
Industrial			
Infiltration			
Total (computed)			
Wet Weather Peak			

End Result

- A valid option for reflecting Onsite Needs

Thank you

- Eleanor Krukowski, P.G., Supervisor
  Onsite Wastewater Management Unit
  Bureau of Nonpoint Pollution Control
  New Jersey Department of
  Environmental Protection
  609-292-0407

Questions

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Summary

Lessons Learned in 2004

- Resources
  - State and municipal health departments
  - Permits and permit applications
  - Engineers and installers
  - Historical knowledge & data
  - State agencies & departments addressing rural issues
  - Research by outside organizations (e.g., Universities, associations of cities and towns)
  - State NPS program and 319 watershed plans

Lessons Learned in 2004

- Communication is key
  - Between state agencies
  - Between state and local agencies
  - Between states and EPA
- Contact EPA as you are developing your methodology.
  - EPA will provide methodology review at states request from June-December 2007.
  - http://www.epa.gov/cwns/method.htm

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http://www.epa.gov/cwns

- List of CWNS state & regional coordinators (Where You Live)
- News about CWNS 2008
  - Web seminar schedule, “Questions and Answers,” and links to recorded sessions
  - Resources (including Decentralized Best Practices Guide)
  - Links to contact information for state & regional NPS, Onsite , and Stormwater Coordinators
- Access to CWNS data and Reports to Congress

Contacts & More Information

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Sign up for CWNS updates by emailing cwns@epa.gov.